

VERMICOMPOSTING 101

VERMICOMPOSTING differs from backyard composting. It relies largely on the digestive tracts of composting worms to convert the organic material to a compost-like material known as **castings**. The castings are very nutrient rich, and when mixed with soil make excellent fertilizer for outdoor and indoor plants.

Vermicomposting has some advantages over backyard composting. Worms can be kept indoors and are apartment friendly. Maintained properly, an indoor vermi-composter does not smell.

In 2012 a group of Guelphites got together to support, talk about, promote and learn more about vermicomposting. After a short period of hibernation, The Guelph Vermicomposting Network has been brought back to life! Send an e-mail to compost@pr.uoguelph.ca to get involved with this exciting project.

SETTING UP

Necessary Materials:

- a bin (plastic storage box or built from untreated wood)
- bedding material (shredded black and white newspaper is standard)
- a couple handfuls of soil
- food scraps
- worms!
- **A note about buying worms:** Unfortunately, you can't just use regular earthworms. The ideal worm is the Red Wiggler, or European Nightcrawler. You can get some from a friend that has an existing bin or order them online.



Setup Instructions:

1. To set up the vermicomposter, you need a relatively dark area. Keep it away from heaters, and out of direct sunlight. If you decide on placing your composter in the basement, don't put it directly on the concrete floor; raise it on old slats of wood or blocks. Also, keep in mind that the worms don't like high traffic areas with loud noises or vibration.
2. Drill holes in the lid, and in the sides near the top. If you would rather not monitor the moisture content of the compost, you can drill holes in the bottom and set up a drain tray to catch the "compost tea". (You can mix this tea with water and use it as a fertilizer!)
3. Shred newspaper (beware, some inks may be toxic to worms) for bedding. Soak the shreds, but only to the point where you can't wring any water out of them. You should have enough to fill between a third and a half of the composter. (Note: The Ontarian works well for this, we have confirmed they use non-toxic color ink)
4. Place your worms on the top of the bedding, and leave the composter open with the light on for about ten minutes. This allows them to work their way into the bedding.
5. The worms will eat the food as it rots, and process it through their digestive tract, and create what you might call "vermi-manure", or to use the technical term, castings.

MAINTAINING YOUR VERMICOMPOSTER

Within your vermicomposter, you are maintaining an ecosystem for a bunch of living creatures. It is more than just a waste disposal and nutrient recycling method, you have dozens of little lives depending on you.

If the conditions for the worms become unliveable, they will exhibit symptoms ranging from climbing the walls and trying to escape, to dying. It is important to keep a close eye on them, especially when you first start. After a bit of a learning curve, they are usually pretty easy to maintain.

Keeping your worms happy

- Worms like their food in meals. Rather than dumping scraps in the composter whenever you can, collect them in a bucket and try and feed them once or twice a week. Both overfeeding them and underfeeding them will cause problems (see below).
 - Bury the food a couple of centimetres under the bedding. Add bedding whenever it becomes difficult to find space to bury the food.
 - The smaller the chunks of food, the easier it is for the worms to digest.
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HOW TO HARVEST

The final result of your vermicomposting is healthy, nutrient-rich soil. You'll know it's ready when the bedding is no longer recognizable. The challenge is getting the finished product out of the composter while leaving all the worms comfortable and safe. There are several methods:

- Worms don't like light. If you leave your composter open with the light on for 10 minutes, the worms will crawl as deep as they can go, with the top layer ready for the harvesting.
- Shift the contents of the composter to one side, and fill the empty side with new bedding and food. The worms will move over to the new side in search of food after one or two weeks. Then you can harvest the finished side, but keep an eye out for the occasional worm

TROUBLESHOOTING

- **Mites:** Mites often occur because the food has gone bad, and there's too much of it for the worms to eat. To prevent this, don't overfeed your worms. To get rid of existing mites, remove all the food, wait a couple days (the worms can eat the bedding), and put fresh food in (less than last time).
 - **Smell:** This is a sign that something is wrong - a well balanced bin will not smell. Smell is often caused by uncovered food. Make sure you bury scraps at least 1-2 inches deep in the bedding. It could also be caused by overfeeding, and the food rotting faster than the worms can eat it. If the bin smells like rotting food, try harvesting the castings more often, or stirring in fresh bedding to aerate the bin.
 - **Escaping Worms:** This is also a sign that something is wrong. Most often, it means the castings have been left unharvested for too long. If none of the other explanations on this page help, make sure to harvest the castings and replace with fresh bedding and food. Shining a lamp on the bin will help make sure that the worms hide in the new bedding and not try to escape. (Worms hate the light.)
 - **Wetness/Dryness:** For dryness, carefully dribble water in and stir to prevent puddling. You can also feed them foods with a higher water content. Adding wet bedding, such as soaked newspaper strips, can also help. Although worms prefer wet environments, they can drown, so if the vermicomposter is too wet, it is also dangerous. Punching holes in the bottom can help drainage, but you will need a drain tray. Another remedy for less severe moisture problems is to mix dry bedding in.
 - **Fruit Flies:** To prevent fruit flies, bury food scraps deeper in the bedding. Also, don't overfeed your worms. To get rid of an existing fruit fly problem, make a vinegar trap. A very simple one is getting a jar or plastic container, and a plastic baggie, and elastic band. Put a small amount of vinegar in the container, enough to cover the bottom and drown the flies. Cut a tiny hole (fruit fly sized) in the corner of the bag, then affix the normal opening of the bag to the container, and make an inverted cone with the corner of the bag by poking down toward the vinegar.
 - **Mold:** Bury scraps deeper, and don't overfeed. Make sure there is adequate oxygen.
 - **Sprouts:** Sprouts aren't really a problem, but if you don't want them there, pull them out and compost them like the food scraps.
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DETAILED FEEDING LIST

Generally speaking, grain products, fruits and vegetables, plant clippings, egg shells, coffee grounds, and tea bags can all go in a vermi-composter.

Be sure to chop, break or crush whole produce such as citrus, pumpkins, squash, and apples. Some worms do not like citrus or onions and garlic. If the food is not eaten after two week, remove it from the composter.

Feed Your Worms:

Plant Matter

- Coffee grounds and filters
- Crushed egg shells
- Dead plants
- Leaves and grass
- Melon rinds
- Peels
- Plant trimmings
- Rotten fruits and veggies
- Tea bags
- Shredded newspaper **not coloured**
- Shredded office paper **not coloured**
- Shredded paper towels

MAYBES: (some worms don't like these)

- Citrus peels
- Onions, garlic

Do NOT feed your worms:

Meat Products

- beef
- bones
- chicken
- fish
- luncheon meats
- pork

Dairy Products

- butter
- cheese
- milk
- yogurt

Grease, Fat and Oil

- vegetable oils
- shortening
- lard
- bacon grease
- peanut butter

HAPPY COMPOSTING!!
